THE GROUND WATER NEWSLETTER

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A twice-a-month report on ground water

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THE ADVANTAGES AND DISADVANTAGES OF STORM WATER RECHARGE WELLS

A case history by N.K. Breeding, Jr. and J.W. Dawson, outlining the experiences of Roanoke, Virginia, shows a mixed bag of blessings and problems that have resulted from the city's use of 120 drainage wells for the disposal of storm water runoff. The paper (Water & Sewage Works - Feb. '77) reports that while the wells have provided an effective and economical solution to the runoff, problems with maintenance, ponding, subsidence, and contamination of ground water are becoming major concerns.

The wells, installed between 1955 and 1969, cost approximately $85,000, a considerable savings over the $5 million estimated for storm sewers. If constructed today, the cost of the wells would be $350,000 against $20 million for sewers. At the time of installation, the cost advantages of the well system seemed clear. The report notes, however, that mounds and depressions have been created in the water table due to solutionalization of the limestone aquifer and sedimentation in the vicinity of certain wells with localized subsidence causing damage to buildings, roads and a sanitary sewer. The paper concludes that there is a significant contamination threat to the aquifer system with degradation of ground water presently evident in local areas.

RAIL SPILL IN INDIANA

A Monsanto tank car, punctured during a derailment, spilled over 30,000 gallons of the toxic chemical, acrylonitrile, into a cornfield in eastern Indiana recently. The spill contaminated soil and streams in the area with some of the compound reaching the Ohio River. Most of the spill is thought to have been contained in local creeks by earth dams and will be pumped out. Plans are being made to remove the contaminated topsoil before the compound percolates to the ground water.

Acrylonitrile is the monomer involved in the recent debate over the safety of plastic soft drink bottles. In that situation, the FDA disclosed that it intended to withdraw approval of an acrylonitrile/styrene version of the bottle produced by Monsanto and used by Coca Cola in some states. Latest reports are that customers have cancelled all orders and that Monsanto has closed three fabrication plants while it meets with FDA.

LONDON TO RECHARGE AQUIFER BENEATH CITY

A report in the publication, Catalyst, states that the U.K. Dept. of the Environment has granted approval for the Thames Water Authority to undertake a pilot project to recharge 8 billion gallons of water into the chalk and sand aquifers under the City of London. Potential storage in the aquifer is high due to recent withdrawals and greatly reduced natural recharge. Plans are to recover approximately 75% of the recharged water.

STATE-GROUND-WATER N

Delaware - EPA (Region III) has warned the governor that continued delay in facing the ground-water pollution problem arising from the closed Llangollen landfill in New Castle County may have "serious and fatal consequences" and will only increase the cost of finding a solution estimated to be presently in the area of $12 million.

Oregon - An order declaring a 270-square mile area in Morrow and Umatilla counties to be a critical ground-water area was reversed recently because the landowners were notified by regular mail and not registered mail as required.

ORIGINAL (Red)

Pennsylvania - Kepone has been found in fish near the Nease Chemical Co. plant site in central Pennsylvania. The plant last produced the substance 13 years ago, but investigation has found Kepone and Mirex in the soil adjacent to the site.

Michigan - The Kalamazoo water utility which serves 125,000 people, has become one of the first in the country to undertake a complete conversion to metric.

Iowa - Irrigation with ground water is being considered by many farmers because of dry weather. According to Stewart Melvin, extension agricultural engineer at Iowa State University, adequate ground-water resources for irrigation are limited in many parts of the state, and competing uses for water supplies are creating conflict over irrigation development in some areas.

Nebraska - Tests of irrigation pumping plants carried out by the University of Nebraska showed only 33 out of 376 to exceed the state's standard for efficiency. Approximately 120 were operating at efficiencies between 50 and 75%. There were 34 units using twice the amount of fuel, or more, than units operating up to standard. Researchers in Texas working on similar studies conclude that "Having pumps in good repair was good business before high priced energy, but now it is a necessity."

New York - EPA called this state's only nuclear burial site "a failur because of radioactive seepage from the site's trenches. The low-level disposal site at West Valley is composed of 14 trenches up to 800 feet long, 20 feet wide and 30 feet deep. Trench water has been pumped out and decontaminated three times since March 1975 when the site was closed. Cost of the decontamination was about $300,000.

Kentucky - Last year, EPA reported that there appeared to be traces of radioactive materials escaping from the Maxey Flats nuclear wastes dumping ground and contaminating the ground water. Recently, however, consultants hired by the state reported that more information will be needed before the EPA findings can be confirmed and supported and advised the site remain open. Monitoring and regulating the site will cost $102,000 for fiscal 1976-77.

PROPOSAL TO BURY NUCLEAR WASTES IN GOLD PLATED CANISTERS

In a critical assessment of the Swedish government's report, "Spent Nuclear Fuel and Radioactive Wastes," Prof. G. Wranglen at the Royal Institute of Technology, said that only gold will withstand the adverse environment around a buried canister of nuclear waste. The government report suggests the use of 10. ft. diameter steel cylinders capped with copper, but Wranglen estimates they would leak in 10 years, and suggests nothing less than a 0.1 mm coating of pure gold.

BUDGET INCREASES FOR 208 AREA-WIDE PLANNING

An increase of $60 million has been put forward in President Ford's budget revisions for environmental control and comprehensive area-wide planning under Section 208 of the FWPCA. Also proposed is a 1977 supplement of $69 million for 208 water quality management planning to cover applications from newly-designated areas and to help pay for tasks unfunded in previous grants.